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## STRUCTURAL LINGUISTICS

John E. Joseph

### 1 Introduction

The term 'structural linguistics' gained currency quite quickly starting in 1940, in both English and French. It was generally associated with the approach set out in the *Cours de linguistique générale* (Course in General Linguistics), published in 1916 and based on lectures given at the University of Geneva by Ferdinand de Saussure (1857-1913) between 1907 and 1911. In the 1920s and 1930s this book (in which the term 'structural' does not actually appear) formed the basis for a reorientation of linguistics from the almost exclusively historical concerns that had dominated the field for the previous hundred years. Saussure was directly cited as the source of the new 'synchronic' concerns of linguists in continental Europe, and less directly in America, though there too the importance of the *Cours* was recognized.

The warm reception of the *Cours* and subsequent development of structuralism on the continent, the resistance to them in Britain, and their muffled acceptance in America were all somewhat predictable. British science and philosophy had been dominated by empirical observation since the 17<sup>th</sup> century. Elsewhere, the unity and simplicity afforded by a powerful theoretical explanation was more compelling than the messiness that empirical observation inevitably turned up. Even Newton, faced with the variation in his measurements of celestial movements, shifted from a methodology based on deciding which of his observations had been made under the best conditions, to averaging out the results of all his observations. The average was a sort of underlying ideal: a measurement he had never actually observed but which could be taken as the deeper reality to which empirical observation — made by human beings using imperfect instruments — could only approximate.

Still, British faith in empiricism remained firm into the 20<sup>th</sup> century, while German science and philosophy wavered between the extreme rationalism or idealism of thinkers such as Hegel and the empiricist commitments of Helmholtz and Wundt. France, meanwhile, wavered between the influences of Britain and Germany. As a Genevese Calvinist, Saussure's upbringing was dominated at least as much by British as by French influences, and certainly not by German ones. Yet most of Europe encountered his thought as mediated through Roman Jakobson (1896-1982), who read Saussure from the theoretical end of the spectrum.

The beginnings of structuralist linguistic method are already visible in Saussure's first published work, *Mémoire sur le système primitif des voyelles indo-européennes* (Memoir on the primitive system of Indo-European vowels, 1879). There is also the work of Franz Boas (1858-1942), discussed below, which shares much of the spirit of structuralism yet developed independently. If the starting point of structural linguistics is hard to pin down, its end point is even more elusive. Twenty years ago that did not seem to be the case: structural linguistics appeared to have been superseded by Noam Chomsky's generative linguistics over the course of the 1960s, and more general structuralism by the 'post-structuralism' that began in last part of that decade. But the evolution of generativism from the 1970s through to the present decade has brought an increase in its methodological continuity with earlier structuralist work, compared with what appeared to be in the case with Chomsky's more radical early approach; while on the epistemological plane, Chomsky's work was always in tune with what European structuralists believed about language and mind. Nevertheless,

this account will end with the rise of generative linguistics, even if, a few decades from now, people looking backward may well perceive a unified structural linguistic method lasting for more than a century, despite the epistemological shift represented by generativism.

Structuralist linguistics arose across Europe and America not in a unified fashion, but in the form of national schools. This was due less to isolation — linguists in different countries read and published in each other's journals, and maintained regular epistolary and personal contact — than to a desire for intellectual independence, especially after the decades of German domination in historical linguistics, and for theories that would reflect the different interests and ideologies of linguists in the various countries. Yet the post-WWI generation all sought approaches that appeared modern and scientific, and they landed on largely the same things. The *Cours* was a major influence on all the structuralist schools, though by no means the only one; it provided a theoretical programme, but only sketches of the actual work to be carried out. All in all, the structuralist period is surprising both in its unity and its diversity.

## **2 Saussure and the *Cours de linguistique générale***

Saussure, Professor of Sanskrit and the History and Comparison of the Indo-European languages in the University of Geneva, was given the further responsibility of lecturing on general linguistics beginning in January 1907. He accepted the charge with reservations, being troubled by the memory of his abortive efforts over the previous decades to produce a book on the subject. Already when writing his *Mémoire* (1879), he had become aware of the intricacies of analysing a linguistic system, whether at the level of sound or of meaning, whether across languages or within a single language, and whether across time or at a given point in time. He knew that he would have to start from the ground up, beginning with the basic terminology: words for language itself, such as *langue*, *parole*, *langage*, which largely overlap in everyday usage.

His first, one-semester run of the course was a good start, but left him dissatisfied. Before the second attempt, which ran over the whole academic year 1908-9, he rethought the course. This time, and in the third course of 1910-11, Saussure completed his account of a language as a system in which each element is bound to every other element, and with the content of an element being nothing other than a value generated by its difference from every other element. It is a model of such elegance — one might even say modernism — that we linguists are still working to accept all its consequences.

The ideas which exerted the greatest influence were, first, the distinction which Saussure drew between *langue* and *parole*. A *langue* (language) is the virtual system possessed by all those belonging to the same linguistic community, which makes it possible for them to understand and be understood by the other members of the community. *Parole* (speech) is the texts, the utterances, produced by an individual, making use of the system that is the *langue*. Although he spoke of a linguistics of *parole* that would cover the phonetic side of language and individual production, Saussure made clear that the linguistics of *langue* is the essential, real linguistics. *Langue* is beyond the direct reach of the individual will; it is, Saussure reiterated, a 'social fact'.

The second fundamental idea is that a *langue* is a system of signs, with each sign being the conjunction of a concept and an acoustic image, which are both mental in nature. For most linguists of the time, a language unites names with things, but Saussure taught that signs do not involve

things, but our concepts of things, of actions and of pure ideas; and not names, but schemata in the brain that are capable of being evoked by certain combinations of sounds. In one of his last lectures he introduced the terms *signifiant* (signifier) for the acoustic image, and *signifié* (signified) for the concept. Saussure predicted that *sémiologie* — the study of signs both within and outside of language — would develop and would have linguistics as its ‘pilot science’. The impact of semiotic inquiry upon linguistics would be slow in coming, apart from the nearly universal acceptance of Saussure’s concept of the signifier as an abstract sound pattern. This view became the cornerstone of the concept of the ‘phoneme’, which first came to widespread attention in the *Mémoire*, and was elaborated by Jan Baudouin de Courtenay (1846-1929) and Mikołaj Kruszewski (1851-1887) in Russia, before being taken up as a centre of attention for all the later structural schools. It resulted in the marginalizing of experimental phonetics within linguistic enquiry, in favour of more abstract phonology, based not upon acoustic or articulatory differences of sound, but on their ability to distinguish between concepts.

Thirdly, the link between signifier and signified is radically arbitrary. This was an ancient doctrine, but by no means an obvious one. There exist apparently mimetic signs, such as *fouet* ‘whip’, in which, arguably, the sound of a whip can be heard. It is however a question of interpretation: for someone who hears the sound, the link is real, despite the etymology of this word, which, as Saussure pointed out, goes back to Latin *fagus* ‘beech tree’ (thin beech sticks having been used as whips). The Saussurean principle of the arbitrariness of the linguistic sign maintains that, whether or not such a sound-meaning is recognized, the sign operates in the same way: *fouet* is not ‘truer’ for those who hear the crack of a whip in it than for those of us who do not. Nor is it ‘truer’ than a word such as *livre* ‘book’, for which a sound-meaning link seems far-fetched at best. However, Saussure was also quick to point out that a language is a system in which everything connects to everything else, and that the linguist’s task is to discover that systematicity, which itself limits arbitrariness within the language as a whole (without however compromising the absolute arbitrariness of the bond between signifier and signified).

Fourthly, each signifier and each signified is a *value*, produced by the *difference* between this signifier or signified and all the others in the system. It is not the sound as such that signifies: there is, after all, much variation in the pronunciation of all sounds. French or English /r/, for instance, covers a wide phonetic range. Indeed, spectrographic analysis shows that even the same individual never produces exactly the same sound twice: subtle differences are registered each time. Yet whether I say English *car* as [kaə] or [kaɪ] or [kar] or [ka], the same word is perceived, so long as it does not overlap with another word such as *caw*. With the signified as well: if an animal of a certain species entered the room as you are reading this, you as an English speaker might exclaim “a sheep!”, and a French speaker might say “un mouton!”. But the linguistic value of *mouton* and *sheep* are different. The signified of *mouton* includes the whole animal or a piece of the animal’s meat, whereas the signified of *sheep* is restricted to the animal on the hoof. Its meat is *mutton*, a completely different sign. What this shows is that not just signifiers, but also signifieds, belong to a particular language. The world as we experience it, with its categories of animals, things, colours, etc., does not exist prior to language. The signifier and the signified are created together, with the particular cutting-up of phonetic and conceptual space that distinguishes one language from another, and one culture from another.

Fifthly, the signs of a language unfold in one dimension only: linearly. This has a fundamental implication for the language system — it has two axes. Each element of the language occupies an associative (now usually called paradigmatic) axis, which determines its value vis-à-vis other elements with which it shares partial identity, and a syntagmatic axis, which specifies which elements may or may not precede or follow it in an utterance. For example, in the sentence *Crime pays* the element *crime* has a syntagmatic relationship with *pays* that determines, among other things, their order relative to one another and the fact that *pays* has the ending -s. At the same time, *crime* has paradigmatic relations with many other elements, including the inflectionally related *crimes*, the derivationally related *criminal*, the conceptually related *misdemeanour* (and the conceptually opposite *legality*), and the phonetically related *grime*. As the last example suggests, each sound of the word *crime* /kraim/ has paradigmatic and syntagmatic relations with at least the sounds around it: /k/ is paradigmatically related to the /g/ that could in principle replace it; and syntagmatically related to the following /r/, since in English the presence of /k/ as the initial element of the word immediately restricts the following sound to /l r w/ or a vowel.

Saussure noted that the two types of relations, which correspond to different types of mental activity, contribute in different ways to the 'value' of the sign. In particular, the paradigmatic relations generate a negative value: the identity of the /r/ in /kraim/ is essentially that it could be, but is not, /l w/ or a vowel. This is important because the actual sound that represents /r/ can differ dramatically from one English dialect to another (being rolled, flapped, retroflex, etc.); but the actual sound content does not matter, so long as /r/ is kept distinct from the other sounds to which it is associatively related. *Langue*, Saussure insisted, is form, not substance. Before Saussure, the syntagmatic relations of morphemes within a given utterance were certainly recognized as a matter of linguistic concern, though relatively neglected. But there was little or no precedent for the idea suggested by the *Cours* (implicitly if not explicitly) that there exists a syntax not only of words, but of sounds, meanings, and the relations uniting them; or that every time a sound, word, or meaning is chosen, a vast network of related elements is summoned up *in absentia*.

In many ways, the Saussurean notion of paradigmatic and syntagmatic relations would become the hallmark of twentieth-century linguistics: first, because it proposed that a single principle of structure unites all the levels at which language functions — sound, forms, and meaning; second, because it suggested a way of analyzing language that would not depend on a simple listing of elements with their 'translation' into either another language or some sort of philosophical interpretation. Elements could henceforth be analyzed according to the relations they maintained with other elements, and the language could be understood as the vast system — not of these elements — but of these relations. This was the point of departure for structuralism.

To a large extent, the distributional method developed by Bloomfield is a working out of this Saussurean notion, with special emphasis on the paradigmatic relations. With the work of Bloomfield's student Zellig S. Harris (1909-1992) the syntagmatic relations assumed a status of equal importance, and with Harris's student Chomsky, overriding importance. Regarding word order, Saussure's view is that the syntagmatic relations constitute that part of syntax which is predetermined — like the use of a 3rd person singular verb form after the singular subject *crime* — and so a part of *langue*; while the rest of syntax, being subject to free combination, is related to *parole*.

Sixthly, a language is characterised by its mutability, since every element is capable of changing, of evolving. No language is found in the same state as it was a hundred years before, still less as it was five hundred years before. Yet, paradoxically, a language is *immutable*, in the sense that no speaker can change it single-handedly. One can introduce an innovation into *parole*, but for this innovation to enter into the *langue* requires that it be accepted by the entire community. However, since the value of each element proceeds from its relation to all the other elements, any change in the system produces a new system, a new *langue*. That is what Saussure means by the immutability of a language: no one can change it; the 'speaking mass' (*masse parlante*) can accept a change, but in so doing it does not change the *langue* as such, but moves forward to a new *langue*.

Seventhly, the study of a language can be synchronic or diachronic. Synchronic study tries to establish the elements of the system and their values at a given moment, which Saussure calls an *état de langue* (state of the language). Diachronic study is the comparison of several *états de langue* as they existed in different periods. But the 'historical' linguistics of Saussure's time was not diachronic: it claimed, rather, to trace the development of isolated elements across the centuries, a vowel for example, or an inflection, as if this element had a history, a life, independent of the system of which it was a part at each moment. One reads too often that Saussure replaced diachronic linguistics with synchronic enquiry; on the contrary, he invented diachronic linguistics, from which, moreover, he took synchronic linguistics to be inseparable.

### 3 Jakobson's structuralism

The person most directly responsible for taking Saussure's linguistics forward and developing a general 'structuralist' approach was the Russian linguist Roman Jakobson (1896-1982). At the age of 19 Jakobson had founded the Moscow Linguistic Circle, a center of the Russian formalist movement, in which certain features of Saussurean analysis — notably the priority of form over meaning—had arisen independently. Sergei Karcevskij (1884-1955) joined the Circle after returning to Moscow in 1917, having spent the previous decade in Geneva. He does not appear to have attended Saussure's general linguistics lectures, but some of his other courses, enough to bring with him a familiarity with Saussurean thought. Jakobson recognized the points of convergence with formalism and earlier work by Russian linguists, but also appreciated the originality of Saussure's systematization.

In 1920 Jakobson moved to Prague, and would remain in Czechoslovakia for the next two decades. He became professor at Brno in 1933, but remained a central figure in the Prague Linguistic Circle, which he helped to found. In collaboration with scholars of language and literature in Prague, including Vilém Mathesius (1882-1945), Jan Mukarovsky (1891-1975) and others, as well as Prince Nikolai Trubetzkoy (1890-1938), who had relocated to Vienna in 1922, Jakobson took structural analysis in a distinctive direction that made Prague the epicentre of developments that were happening in Paris, Copenhagen and London, and to a certain extent in America. The "Theses Presented to the First Congress of Slavic Philologists in Prague, 1929", authored by Jakobson, evince characteristics of Prague structuralism such as breadth — the theses include programs for the study of poetic language and applications to language teaching — and a focus on 'functionalism': "Language," the document begins, "like any other human activity is goal-oriented" (Steiner 1982: 5). Besides any immediate material goal to be accomplished, Prague inquiry assumed a constant, implicit goal of maximally efficient communication, whether in the case of a casual utterance or some manifestation of poeticity. The Prague School also devoted considerable attention to analyzing

the special nature of standard and literary languages, a topic in which they had a very practical interest given the need to establish and maintain a national language acceptable to both Czechs and Slovaks that had existed since the creation of Czechoslovakia in 1918.

Jakobson and Trubetzkoy collaborated on work which suggested, contrary to what Saussure's *Cours* maintains, that the relationships holding among all elements of the linguistic system are not of precisely the same nature (see Jakobson 1990; Trubetzkoy 1949). For example, the consonants /t/, /d/, and /f/ are distinctive phonemes in most languages, since they function to distinguish meanings (*tin* vs. *din* vs. *fin*). Yet it seems obvious that /t/ and /d/ have a closer relationship to one another than either has to /f/. In /t/ and /d/ the vocal organs perform essentially the same action in the same position, except that in /d/ the vocal cords vibrate. In many languages, Jakobson and Trubetzkoy noted, the distinction between /t/ and /d/ (and other pairs of unvoiced-voiced consonants) is 'neutralised' in certain positions, for instance at the end of a syllable or word: the German genitive (possessive) noun *Rades* 'wheel's' has as its nominative (subject) form *Rad*, pronounced not \*[rad], but [rat], the same as *Rat* 'council'.

Again, the possibility of such a deeper connection contradicts the Saussurean view that the phonetic substance of /t/ and /d/ is inconsequential, and all that matters is the fact that they differ in some perceptible way. Jakobson and Trubetzkoy proposed the term *correlation* for the type of relationship holding between /t/ and /d/. Any pair of elements which do not exist in a correlation, such as /d/ and /f/, form instead a *disjunction*. As their work progressed, a new perspective developed. They realized that the correlation /t/-/d/ consists of a core of features common to the two sounds, plus a *principium divisionis*, the factor which distinguishes them, vocal cord vibration (voicing). They created the term *archiphoneme* for the core of features common to /t/ and /d/ (symbolized /T/). This allowed them to specify that the alternation between German *Rades* and *Rad* does not involve simply a change of phonemes; it is a realization of the same archiphoneme, but with the *principium divisionis* deleted in word-final position.

It was Trubetzkoy who first proposed to Jakobson in 1930 that certain elements in the linguistic system could be thought of as having an interrelationship that is neither arbitrary nor purely formal, but defined by the fact that one element is distinguished from the other through the addition of an extra feature, a 'mark'. When the distinction is neutralized it is always the simple, 'unmarked' member of the opposition that appears. Thus the minimal contrast between the genitive nouns *Rates* 'council's' and *Rades* 'wheel's' is neutralised in the nominative, where, as noted above, both *Rat* 'council' and *Rad* 'wheel' are pronounced with a final /t/ — the unmarked member of the pair. The 'mark' in this case is the vibration of the vocal cords that differentiates /d/ from /t/, making /d/ the more 'complex' member of the correlation.

Because simplicity as here understood includes the physical elements of articulation and sound, markedness undoes the key Saussurean tenet that language is form, not substance. Trubetzkoy wrote to Jakobson almost casually mentioning the idea. Jakobson immediately saw its full implications, and his reply — extracts from which appear at the beginning of this chapter — moved far beyond Trubetzkoy's modest proposal, to foresee developments in the analysis of literature and culture that would not come to fruition for another two to three decades.

Saussure's *Cours* had said that the two primary principles of the linguistic sign were arbitrariness and linearity. The discovery of the mark led Jakobson to contest both these principles. By 1932 he was

extending the idea of the mark to morphology, to suggest for example that the reason a plural noun like *doctors* or a possessive like *doctor's* is phonologically longer, hence more complex, than the corresponding singular non-possessive *doctor*, is that the latter is *conceptually* simpler. This conceptual simplicity is signalled iconically at the level of sound. Jakobson came to believe that such iconicity is a general principle running through all languages. It means that signifiers (words as sound patterns) are not as arbitrarily connected to signifieds (meanings) as Saussure had suggested. Rather, *parallelism* between form and meaning is the hidden principle structuring language.

The mark also means that linguistic signs are not strictly linear in their make-up or functioning. This is clearest in phonology, where voicing (as in the d-t contrast discussed above) constitutes the same 'distinctive feature' in the whole set of consonants /b d g v z/ (and others). The voicing feature is added onto the simpler forms /p t k f s/. In other words, /b/ does not function as a single unitary phoneme, but as the equivalent of /p/ plus the feature of voicing. Moreover, /p/ itself breaks down into the features 'stop' and 'bilabial' — so in fact /b/ is a bundle of *three* distinctive features signalling at once, like a musical chord, 'vertically' rather than in a linear fashion.

After Trubetzkoy's death, Jakobson would extend the theory to predict that unmarked elements would prove to be those which occur most widely across languages, are acquired first in childhood, and are lost last in aphasia. Following his emigration to America in 1942, Jakobson exercised a fundamental impact on the development of structuralism, both through his conceptual innovations and his success in exporting his brand of structuralism to other human and natural sciences, where it became the dominant paradigm in the 1950s and 1960s. At the start of 1942 Jakobson began lecturing at the 'École Libre des Hautes Études' organized in New York by fellow refugees, most of whom, like Jakobson, had arrived to find no immediate prospect of academic employment. The audience included linguists of several nationalities as well as some of Jakobson's fellow teachers in the École, one of whom was Claude Lévi-Strauss (1908-2009). During the first term Jakobson gave two courses, one consisting of six lectures on sound and meaning and another on Saussure. The latter course was in fact a thoroughgoing critique of Saussure, and the former too included the challenge to Saussure's doctrine of linearity. Both reflect the new turn introduced into Jakobson's thinking by his analysis of the phoneme into distinctive features. Nevertheless, the lectures were presented to an audience including some not previously acquainted with Saussure and others who knew him only superficially, so that in spite of their critical nature they had the effect of drawing attention to the *Cours* and securing its place at the head of the structuralist canon.

Shortly before his death the philosopher Ernst Cassirer (1874-1945) read a paper "Structuralism in modern linguistics" to the Linguistic Circle of New York, a group Jakobson co-founded. The paper is important as the first wide-ranging philosophical discussion of structuralism, its aims, methods and meaning. Cassirer situates structuralist linguistics within the history of philosophy and science, comparing it explicitly with various developments across the centuries in which mere superficial empiricism was rejected in favour of the search for underlying organizing principles which operate with perfect regularity: "structuralism is no isolated phenomenon; it is, rather, the expression of a general tendency of thought that, in these last decades, has become more and more prominent in almost all fields of scientific research" (Cassirer 1945: 120). Cuvier's principles of biology are cited as a particularly close example, along with Gestalt psychology. Cassirer also affirms that Wilhelm von Humboldt (1767-1835) anticipated a central tenet of structuralism with his declaration that language is not an *ergon*, a product, but an *energeia*, a potential (a distinction partly recapitulated in



Saussure's *parole* and *langue*). For Cassirer, this amounts to saying that language is organic, "in the sense that it does not consist of detached, isolated, segregated facts. It forms a coherent whole in which all parts are interdependent upon each other". Here for the first time the basis of general structuralism was proclaimed by an eminent philosopher who was an outsider to Jakobson's Moscow or Prague entourages, before an unusually multidisciplinary audience brought together by the circumstance of being in exile from Nazi-dominated Europe.

#### 4 Other Continental structuralist approaches

Back in Geneva, Saussure's linguistics continued to be taught by Charles Bally (1865-1947) and Albert Sechehaye (1870-1946), who had jointly edited the *Cours*, and later by Henri Frei (1899-1980) and Luis Prieto (1926-1996). As others elsewhere were moving the structuralist paradigm forward, however, Geneva came increasingly to be seen as the bastion of sticking conservatively to Saussure's teaching. Bally's work (excerpted in Godel ed. 1969) was widely read in order to gain deeper insight into Saussure's teachings. Bally's work in stylistics, which dated from Saussure's lifetime and in the case of one book was dedicated to Saussure, did take its own direction, but it was not the one that was becoming recognised elsewhere as what 'structuralism' essentially represented. It is based on the distinction between what Bally terms 'affective' and 'intellectual' uses of language, which have no equivalent in Saussurean linguistics. What is more, in the 1920s and 1930s, Paris so outshone Geneva as the centre of linguistics in the French-speaking world that the 'Geneva School' remained a small circle and tended to keep its stars at home rather than sending them out to spread the word.

In Paris the flame was kept alight by Antoine Meillet (1866-1936), who had been Saussure's student back in 18xx and remained his epistolary confidant for the rest of Saussure's life. Meillet had absorbed the principles of structural linguistics from Saussure's *Mémoire* and his teaching of the ancient Germanic languages long before the *Cours* appeared, and passed them on to two generations of linguists for whom he was the *grand maître*, including Joseph Vendryes (1875-1960), Robert Gauthiot (1876-1916), Marcel Cohen (1884-1974), Georges Dumézil (1898-1966), Lucien Tesnière (1893-1954), Émile Benveniste (1902-1976) and André Martinet (1908-1999). In all of their work one finds an approach to linguistic problems from the point of view of the whole system, either synchronic or diachronic. The particular characteristic of Meillet's work has been identified as being to focus on just those elements that appear strange or surprising in the perspective of the language system as a whole, and to delve into them as a key to a deeper understanding of the system and its operation (see Meillet 1921-36).

An example of this, and one of Meillet's most enduring legacies, is his analysis of what in an article of 1912 he termed 'grammaticalization'. In many (perhaps all) languages can be found elements that, at a previous historical stage, were fully independent words, but that at a later stage have become parts of the grammar system, in the form of endings or auxiliaries or particles that have been wholly or partly 'bleached' of their autonomous meaning and usually reduced phonetically. An example is the English verb *will*, which changed from having the full sense of *want* or *wish* to being a future tense auxiliary (*He will go, though he doesn't want to*) that often appears in reduced form (*He'll go*).

Benveniste lectured on linguistics in the Collège de France from 1937 to 1969 and had an especially profound influence on the next generations of French linguists, but also more widely on those 'structuralists' and 'post-structuralists' whose interests were very much language-focussed yet who did not think of themselves as narrowly constrained to any one discipline, be it linguistics, semiology,

philosophy, psychology, literature, sociology or ethnography. He would bring perspectives from several of these disciplines to bear on a grammatical category such as person, and examine how the category is realized in a vast range of different languages across the world. Of particular interest to him is how, through a device such as person, the speaker and hearer are themselves encoded into the language (see Benveniste 1966-74). His later work inaugurated the focus on the 'enunciation' that would be taken up by the later structuralism of Antoine Culioli. Meillet's protégé Gustave Guillaume (1883-1960), a relatively isolated figure on the Parisian scene, cut his own structuralist path distinct from those of the Prague-oriented Martinet and Benveniste. Like Hjelmslev, Guillaume was largely concerned with elaborating the systematic and abstract programme of the *CLG*, but less algebraically and with more concern for linguistic data and psychological mechanisms.

Copenhagen, an important centre of linguistic work since the early 19<sup>th</sup> century, was dominated in the 1920s and 1930s by Otto Jespersen (1860-1943), who gained his early renown in phonetics and the history of English, and undertook in the 1920s an attempt to delineate the 'logic' of grammar divorced from psychological underpinnings — work that anticipates future directions in its attention to syntax and child language acquisition. Jespersen would expressly reject some of the key tenets of Saussure's *Cours* and structuralism. But the next dominant figure in Copenhagen, Louis Hjelmslev (1899-1965), was determined to push Saussurean linguistics and semiotics as far as they could be pushed in the direction of further, quasi-mathematical complexification. His approach, 'glossematics', went farther than any of his contemporaries toward working out the 'relational' nature of linguistic systems as implied in the *Cours*. It introduces various semiotic and 'metasemiotic' layers, and breaks utterances down into 'taxemes' and 'glossems', insisting that "the principle of analysis must be a recognition" of 'dependences' (Hjelmslev 1953 [1943]: 28), which turn out in fact to be "bundles of lines of dependence". Hjelmslev's faithfulness to Saussure comes through in his criticism of the Prague and London Schools for claiming to be 'functionalist' but nevertheless continuing to rely on analysis of phonetic substance. His work would lay the foundation for a Copenhagen School which would influence developments in structural linguistics, and later the post-structuralism of Gilles Deleuze (1925-1995) and Félix Guattari) world-wide, and particularly in Britain, through his student Hans J. Uldall (1907-1957), who emigrated there and interacted significantly with the students of the men discussed in the next section.

## 5 Structural linguistics in the English-speaking world

The United Kingdom, traditionally self-reliant (if not insular), resisted the importation of structural linguistics. Britain had already undergone its modernist turn in the study of language with the work of the phoneticians Henry Sweet (1845-1912) and Daniel Jones (1881-1967). One of Saussure's fundamental concepts, the phoneme became central to Jones's work, but as a phonetician his interest was limited to the sound level of language. Two of the lecturers whom he hired were however more devoted Saussureans: first, Harold E. Palmer (1877-1949), a practitioner of what would later be called applied linguistics; and later, J. R. Firth (1890-1960), who became the most important British linguist of the 20<sup>th</sup> century.

In the USA, on the other hand, the *Cours* seemed to be of a kindred spirit with the 'distributional' method developed for the analysis of American Indian languages by the anthropologist Franz Boas (1858-1942), a German émigré, and published in its definitive form in 1911. Late in the 19th century, as anthropology moved from a physical toward a cultural orientation, an impressive fieldwork

methodology was developed based on positivistic principles. Since language was taken to be an integral element of culture, but with linguists so single-mindedly focussed on tracing the history of Indo-European tongues, anthropologists had little choice but to undertake the description of unknown languages on their own. Much of Boas's work was aimed at establishing the historical affiliations of American Indian tribes through their linguistic relations.

Saussure's *Cours* was well received both by Edward Sapir (1884-1939), the first amongst Boas's linguistic students, and Leonard Bloomfield (1887-1949), who came from the historical linguistics tradition. Bloomfield would go on to do his own fieldwork on American Indian languages, and he and Sapir would establish themselves as the pre-eminent American linguists of the interwar period. Each published a widely-read book with the title *Language*, Sapir in 1921, Leonard Bloomfield in 1933. Of all the books in linguistics published in the English language, Bloomfield's *Language* had, until the 1960s (and arguably beyond) the best claim to being definitive. Bloomfield himself would say in a letter to one of his students that Saussure's influence was to be found "on every page" of the book (Cowan 1987).

Sapir and Bloomfield followed parallel and convergent career paths. Both were active, together with Boas and others, in institutionalizing American linguistics and developing and refining an analytical method known as 'distributional' because it classifies elements according to the environments in which they appear. Yet where Sapir's ideas are embedded in a broad cultural-anthropological perspective, Bloomfield had traded in his adherence to Wundt's *Völkerpsychologie* and become a behaviourist, conceiving of languages as systems of stimuli and responses. Meaning, being unavoidably mentalistic, was suspect to Bloomfield, unless it was determined objectively on the basis of distribution. Some of Bloomfield's students and followers, led by George L. Trager (1906-1992) would develop a still more radical position, virtually exiling meaning from the purview of linguistics altogether, though it is a mistake to associate this position with Bloomfield himself.

Despite their general convergence, then, Bloomfield's view was more narrowly linguistic than Sapir's and profited from its attachment to the empirical and 'modern' British-American science of behaviourism. Such was the success of Bloomfield's *Language* that it effectively set the agenda of American linguistics for a generation to come. Sapir and his students contributed at least as much as Bloomfield and the (neo-)Bloomfieldians to the refinement of the distributional method and phonemic theory, but never forsook their broader anthropological interests. Sapir's student Benjamin Lee Whorf (1897-1941) pursued a line of enquiry into the notion that the structure of thought might be dependent upon the structure of the linguistic system. This idea, the 'Sapir-Whorf Hypothesis', was in some ways a throwback to Humboldt, in other ways the ultimate expression of faith in the power of the linguistic system; but in any case it was anathema to the anti-mentalist Bloomfieldians, and even today it continues to arouse controversy (see Whorf 2012 [1956]).

In Britain, Jones (1950) played a key role in refining the phoneme into its later, definitive form, as the minimal sound-unit capable of distinguishing meaning in a language. But, as a phonetician, Jones was not inclined to follow Saussure in imagining the phoneme as having, like any signifier, a purely mental reality. Instead, Jones linked phonemes to a sort of idealised articulation, most famously with his 'cardinal vowels', a sort of concept-*cum*-technique of pronouncing vowels at their extreme limits to try to capture their essence. For American linguists, working out the precise nature of the phoneme would be at the core of their debates for some four decades, and behind that debate lay

that even more fundamental one, about the nature of meaning itself, and its place, if any, in linguistic method. Bloomfield's behaviourist commitments meant that he too steered clear of any depiction of phonemes as mental categories, rather than simply as units of observable behaviour.

Sapir (1933), without mentioning Bloomfield (just Boas, Jones, Trubetzkoy, Sapir himself and, unusually, three of his Native American informants), threw down the gauntlet to the behaviourist methodology, making a strong case that the outsider 'expert' who analyses a spoken text phonemically may well here a single phoneme where the native speaker knows or intuitively feels that there are actually two separate phonemes, the distinction between which may come out only in relatively rare phonological contexts that the observer happens not to encounter. Sapir gives the example of English *saw* and *soar*, which sound the same in certain British dialects, but for native speakers have different final phonemes that may be (though are not always) realised differently when *-ing* is attached, for example. A Bloomfieldian would be inclined to trust the outside observer and look for reasons why the native speaker may be deluded, by the writing system for example. A Sapirian would consider the native's intuition to be inherently valid enough at least to merit testing for possible phonological environments where the distinction becomes clear (hence eliminating any illusion created by writing).

The 'London School' of Firth was even less cautious than Sapir where meaning was concerned, taking it as a common-sense fact that needed analysing but not defending. Indeed, Firth approached the whole systematic nature of language in an unparalleled way. Whereas other schools — including the influential phonetics of Firth's own colleague Jones — conceived of language systems as consisting of a small set of largely independent subsystems (phonology, morphology, syntax, suprasegmentals), for Firth language was 'polysystemic', incorporating an infinite number of interdependent micro-systems which overlap the traditional levels of analysis. The London School's refusal to separate phonology and suprasegmentals, for example, made interaction with American structuralists almost impossible. Yet it anticipated work in generative phonology by nearly half a century. The 'neo-Firthian' systemic-functional linguistics of M. A. K. Halliday and his followers represents the most robust uninterrupted continuation of an essentially structural linguistic tradition (*modulo* the comments in the Introduction to this paper concerning generativism).

Jones's work, with its treatment of meaning as something unproblematic that phonemes could differentiate, was readily absorbed by American linguists. Even if they left his cardinal vowels aside as not useful for their purposes, the International Phonetic Alphabet project in conjunction with which they developed was embraced. Firth, on the other hand, seemed impenetrable. He had published two introductory books on linguistics which seemed elementary when compared with those of Sapir and Bloomfield, and had embarked on a series of papers in which he presented his polysystemic complexifications briefly and sketchily; one had to study with him in order to understand them fully and appreciate their import. Those who did inevitably became lifelong devotees. His essential difference vis-à-vis Jones, Bloomfield and Sapir was that, where they strove to find the simplest solution to the problems posed by language, Firth started from the assumption that language is a massively complex phenomenon, and that its analysis was bound to reflect and embody that complexity.

From about 1945 younger American linguists showed an increasing bent toward the algebraic and mathematical aspects of structuralism, in the use of tables, formulas, and other mathematical

schemata, statistics, calculations, and the generally rigorous working out of the notions of system and systematicity. Such a bent had already figured prominently in the work of Hjelmslev and Guillaume. In the early 1950s military and commercial interest in furthering the wartime progress on computers and machine translation improved the fortunes of many linguists, particularly in America, and gave even more impetus to the development of computationally-based models.

In America, the 'neo-Bloomfieldians' assumed the mainstream mantle they had previously shared with the disciples of Sapir, and anthropological linguistics retreated to the status of a subdiscipline. Bloomfield's mathematically inclined heir apparent Charles F. Hockett (1916-2000) rose to prominence, as did Zellig S. Harris (1909-1992), whose *Methods of Structural Linguistics* (completed 1947, published 1951) marked the high point in the systematization of Bloomfieldian analysis. Harris, Jakobson and Hockett also began extending their enquiry to syntax, a largely neglected area (despite a number of high-quality contributions over the years, especially in the historical domain). Although syntactic studies would not come fully into their own until the ascendance of Chomsky, who declared a sharp break with the structuralist (especially Bloomfieldian) tradition, nevertheless in his wake further structuralist accounts of syntax were put forward, of which the most notable are the 'stratificational grammar' of Sydney M. Lamb, which follows largely in the tradition of Hjelmslev, and the 'tagmemics' of Kenneth L. Pike (1912-2000).

In 1950 Firth wrote that "Nowadays, professional linguists can almost be classified by using the name of de Saussure. There are various possible groupings: Saussureans, anti-Saussureans, post-Saussureans, or non-Saussureans" (Firth 1957: 179). He was convinced that Saussure's conception of *langue* contained several fundamental errors, two of which were that it abstracted the language system away from context, and that it located it in the mind of the speaker ('psychological structuralism'). Firth strived toward a concept of language as something located not within people (whether as individuals or social groups), but within *what people do*, the context of situation, borrowing a term from the anthropologist Malinowski. Unlike pragmaticians such as J. L. Austin, who saw language as inseparable from the actions people perform, Firth did think of language as something apart, a particular "form of human living" (close to Wittgenstein's late view of language as a *Lebensform*, a "form of life") that needed to be analysed in its own terms, though never separately from the context in which it occurred (see Firth 1968: 206).

In Europe too syntactic studies were under way, following on the pioneering work of Tesnière. But the focus of structuralist investigation remained on phonology, with dialect geography and historical linguistics continuing to be more actively pursued than in America. Martinet, who after Jakobson had done most to transplant Prague-Paris structuralism to America, returned to France in 1955 and pursued a 'functional linguistics' that would have its share of adherents (see Martinet 1960). Meanwhile the younger generation of European scholars looked increasingly to America for innovative ideas and technological advances. Hence the major development in structuralism during this period was its exportation to other fields — until a revolt against structuralism became part of the student uprisings of 1968. From the mid-1960s to the mid-1970s, European linguistics turned increasingly toward American generativism, while the other human sciences played out a 'post-structuralist' phase. But the last couple of decades have seen a resurgence of linguistic work that no longer clings to the commitments that defined a Chomskyan 'revolution', and that pursues an object of study more like the Saussurean system of socially-shared *langue* than like the 'I-language' of an

idealized native speaker-hearer in a homeogenous speech community, which Chomsky claimed could be the only scientifically valid construct for linguistic study.

## 6 Structural linguistics after Chomsky

Thinking back to the influences of Saussure on 20<sup>th</sup>-century linguistics, it is clear that they developed in very different directions in continental Europe and America, though there are three important caveats to this. First, Sapir was something of a bridging figure between the two. Secondly, Britain was more aligned with America even while resisting its influence and trying to stake out its own path. Thirdly, Jakobson throws everything into disarray, being fundamentally both European and American. And Jakobson's larger-than-life intellect and personality did not fail to make a significant impression on the young Chomsky, who got to know Jakobson when both were working at Harvard and Jakobson was directing the doctoral thesis of Chomsky's friend Morris Halle. Jakobson's particular focus on language *universals* — a focus that endured throughout his career — was out-of-sync with the rest of structural linguistics, which, following Saussure, started from the assumption that languages could vary from one another virtually without limits. Jakobson believed that, on the contrary, the common human functional purposes shared by all languages tied them together in a way that must be reflected in commonalities of structure.

This Jakobsonian vision inspired two very different (indeed opposed) research programmes. One was the anthropological linguist Joseph Greenberg set out to explore empirically discoverable universals of language, which inevitable turned out to be 'statistical' universals (features shown by, say, 70% of the languages he examined from a sample representing a wide range of language families and types; see Greenberg ed. 1966 [1963]). The other was Chomsky's programme of finding — principally through linguists exploring their own intuitions about their own mother tongues — structures that could be asserted as being part of a 'universal grammar' physically 'hard-wired' into the brain, part of human mental or cerebral 'architecture'. Both these programmes deviated from the neo-Bloomfieldian behaviourist-inspired empirical approach, but Greenberg's less so, since at least it retained an empirical methodology. Chomsky's deviation was both conceptual and methodological, eschewing the analysis of texts as trivial, and embracing instead an introspection that was the antithesis of what behaviourism stood for. Yet, in these deviations, Greenberg and especially Chomsky moved closer to what 'structuralism' had come to signify in 20<sup>th</sup>-century *European* linguistics — which, again, had likewise felt the shaping hands of Jakobson.

Chomsky's revolution lay partly in convincing American linguists that the behaviourist rejection of the mind was misguided (his 1959 attack on Skinner is now generally recognized as having been in fact a proxy attack on the neo-Bloomfieldians), and that common-sense intuitions about the mental were not necessarily unscientific. He insisted on a distinction between 'competence' and 'performance' which in early work he likened specifically to the *langue* and *parole* of Saussure (although they were not exactly the same), and maintained that linguistic competence was a discrete, unconscious component of the mind having a fundamentally universal structure, much as European structuralists had interpreted Saussure's *langue*. No less importantly, he introduced a distinction between 'deep' and 'surface' structure in language which people outside linguistics quickly latched onto and interpreted in ways far removed from Chomsky's original intention, reshaping them to fit the deep-seated sense that words do not mean what they purport to mean. This sense has been at the root of many 'functionalist' developments in 20<sup>th</sup>-century linguistics,

particularly within European structuralism, where, for better or for worse, the notion of separate conscious and unconscious minds is taken for granted. In view of the fact that he set American linguistics on a path significantly less at odds with the Saussurean framework while undoing none of the common points between Bloomfield and Saussure (except perhaps the amount of lip service paid to the social nature of language, which Chomsky did not deny but simply excluded from his realm of interest by defining that realm as the competence of an idealized native speaker-hearer in a homogeneous speech community), it seems reasonable to argue that Chomsky introduced structuralism into American linguistics, more fully than any of his predecessors.

As noted earlier, the intellectual descendants of Firth, who cut his own polysystemic structural path, have constituted one of the structural alternatives available during the ascendancy (and now the plateau, at best) of generativism. R. E. Asher, who studied under both Jones and Firth, says that Firth was very conscious of differentiating his linguistics from American linguistics (interview with the author, 13 Jan. 2013). Asher recalls him speaking rarely of American linguistics, but often of continental linguistics, with Saussure coming up in nearly every lecture. This heritage is clear in the 'social semiotics' of Halliday, which underlies Systemic-Functional Grammar (see e.g. Halliday 1978); and perhaps less clear, but nevertheless present, in the neo-Firthian approaches to phonology associated with Terence Langendoen and John A. Goldsmith.

Finally, another major area of present-day linguistics represents a direct continuation of the structural tradition, and a long-standing alternative to generativism (even if its development was in some ways swayed by the generative ascendancy). Sociolinguistics developed out of several strands of research, including dialect geography and social anthropology, but most centrally from the line that led from Saussure to Meillet to Martinet, to Martinet's student Uriel Weinreich (1926-1967), and to Weinreich's student William Labov. By its very nature sociolinguistics has had to adhere to the structuralist commitment to language as a 'social fact', rather than as the I-language in the head of an individual, and to focus on empirical linguistic differences rather than searching for hypothetical universals which such differences purportedly mask. Its work has consisted partly of looking more microscopically at how linguistic communities are constituted of smaller sub-communities bound up with factors such as age, gender and social class, and at how these factors play out in language variation and change; and partly at how linguistic signs indexically signify the identities of their speakers, an approach which admittedly owes more to Charles Sanders Peirce (1839-1914) than to Saussure. In recent work the senior sociolinguists Labov and John Rickford have been asserting the 'independence of linguistic and social constraints', in other words that social factors and linguistic factors operate separately — there is a core of language that is shared by a community, and it is in the *use* of this core that social differences manifest themselves. Insofar as this is a rediscovery of Saussure's distinction between *langue* (the core) and *parole* (the individual's use of *langue*), structural linguistics has, a century after Saussure's death, come full circle.

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